

To: Town Council, Barrington Residents.

From: Magnus Thorsson, Chair Resilience & Energy Committee.

Subject: Supporting evidence for amending noise ordinance.

The use of gas-powered lawn equipment and other noisy gas-powered machinery is causing a public health concern by subjecting citizens including children and other vulnerable populations, to harmful noise levels and toxic emissions, necessitating increased public awareness and a prioritization of health by both policymakers and industry manufacturers and service providers.

More than 200 towns across the US have restrictions on leaf blowers in place. Below is a summary of four pertinent articles from various open sources. And peer-reviewed scientific literature.

- The National Institutes of Health (NIH) recognizes the health risks associated with gas-powered lawn equipment including noise pollution, and exposure to harmful emissions which can impact human health and well-being.
- The Department of Environmental Management (DEM) is regulating gas-powered lawn equipment to mitigate its environmental impact, including emissions and noise, which can affect human health and well-being.
- The Centers for Disease Control and Prevention (CDC) identifies the health concerns related to gas-powered lawn equipment, particularly the risk of respiratory issues and hearing impairment, highlighting their potential adverse effects on human health and overall well-being.

How Cities and States Are Curbing Gas-Powered Lawn Equipment. 10/11/23

<https://nextcity.org/urbanist-news/how-cities-and-states-are-curbing-gas-powered-lawn-equipment>

Cities and states combat gas lawn equipment's environmental and health impact, emphasizing emissions, noise, and risks. Measures include electric tools, noise rules, and community education. Public policies are key to greener lawn care. Sustainable alternatives mitigate health and environmental issues.

Some towns across CT are considering stricter regulations on gas lawn equipment. 05/14/23

<https://www.ctinsider.com/politics/article/ct-towns-restrict-leaf-blowers-westport-climate-18001148.php>

Connecticut towns, led by Westport, curb gas leaf blower use for climate and noise control. Westport's strict rules limit usage, promote quieter electric models, and impose fines. Other towns are mulling similar steps to combat noise and environmental impact. It reflects growing concern for the environment and health, fostering sustainability in communities.

Why leaf blowers are being banned across the country. 10/26/23

“Operating a gas-powered leaf blower for an hour emits as much smog-forming pollution as driving a Toyota Camry from L.A. to Denver.”

<https://www.fastcompany.com/90972850/why-leaf-blowers-are-being-banned-across-the-country>

The US bans gas leaf blowers for environmental and health reasons, citing noise, pollution, and carbon emissions. Many cities adopt rules promoting electric alternatives, aligning with the shift toward greener and quieter landscaping practices. Growing awareness of environmental and health concerns drives these bans.

State and local legislatures eye bans on gas-powered lawn equipment. 04/28/23

<https://justthenews.com/politics-policy/energy/bans-gas-powered-lawn-equipment-horizon-several-state-local-legislatures>

US states and cities mull bans on gas lawn gear due to environmental and health worries, emphasizing emissions and noise impact. Proposals include sales restrictions and electric tool incentives, part of a broader shift to greener, quieter landscaping practices.

Characteristics of Lawn and Garden Equipment Sound

National Institutes of Health (.gov)

<https://www.ncbi.nlm.nih.gov> › articles › PMC6707732

This article highlights several negative health impacts on humans associated with gas-powered lawn equipment. These include increased exposure to air pollutants and noise, which can contribute to respiratory issues, cardiovascular problems, and hearing impairment. Prolonged exposure to these machines can exacerbate pre-existing health conditions and pose risks to vulnerable populations, such as children and the elderly. The study emphasizes the importance of adopting cleaner and quieter alternatives to mitigate these health risks and improve the overall well-being of individuals using or residing in proximity to gas-powered lawn equipment.

Lawn and garden equipment sound: A comparison of gas and battery electric equipment.

Pollock, C., Sparks, G., & Banks, J. L. (2018). Lawn and garden equipment sound: A comparison of gas and battery electric equipment. *J Environ Toxicol Stud*, 3(1).

Battery-powered landscaping equipment, such as leaf blowers, is expected to reduce the risk of hearing impairment and noise annoyance in the community compared to gasoline-powered alternatives. Research shows that battery-powered leaf blowers emit significantly lower sound levels, up to 22 dBA lower outdoors and up to 19 dBA lower indoors, making them quieter and less likely to penetrate closed windows.

Policy makers should raise public awareness of gas-powered landscape equipment as local sources of harmful noise, as well as toxic emissions. Industry-manufacturers and service providers-should adopt equipment and practices that place the highest priority on the health of workers and the public.

Field Comparison of Gas-Powered vs. Battery-Powered Equipment for Grounds Maintenance – Hedge Trimming Operations

https://www.sea-acustica.es/INTERNOISE_2019/Fchrs/Proceedings/1474.pdf

The study investigates the soundscape and noise exposure in urban parks, focusing on people's perceptions of noise. It reveals that park visitors generally perceive urban park soundscapes as positive and prefer when they contain natural sounds, such as birdsong. However, exposure to urban noise sources, particularly traffic noise, has a negative impact on soundscape perception. The research underscores the importance of incorporating natural elements and reducing urban noise sources to enhance the overall soundscape quality of urban parks and improve visitors' experiences.

Battery	Decibel dB	
Blower - Battery-powered blower – Stihl BGA 85	72	
Trimmer - Battery-powered trimmer – Stihl HLA 65	76	
Gas		
Blower - Gasoline-powered blower – Stihl BR 550	95	
Trimmer - Gasoline-powered trimmer – Stihl HL 100 K-Z	90	

Landscape and Horticultural Services - Occupational Safety and Health Administration. US Department of Labor.

<https://www.osha.gov/landscaping/hazards>

Occupation Safety Health Administration (OSHA) is concerned about the occupational safety risks associated with gas-powered landscaping equipment, particularly related to noise levels, vibration, and exposure to hazardous chemicals, and has regulations in place to address these concerns and protect workers.

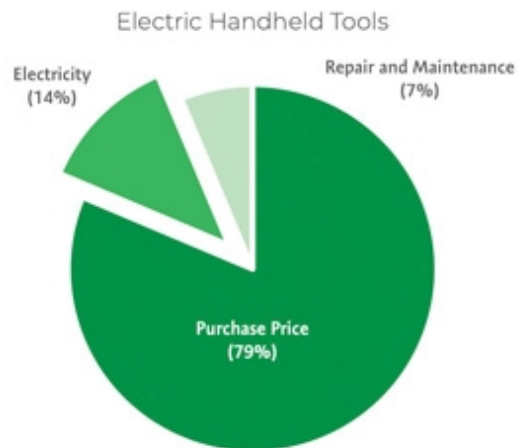
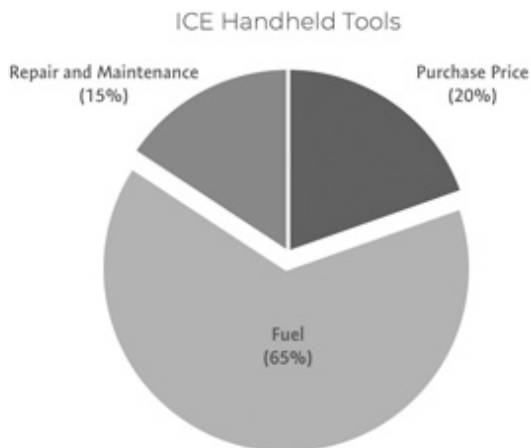
Turf Magazine (April, 2023) Gas Vs. Electric OPE: Real World Costs.

Turf magazine provides information and resources to professionals involved in lawn care, landscaping, and other turf-related activities to enhance their knowledge, skills, and business practices.

<https://turfmagazine.com/gas-vs-electric-outdoor-power-equipment-real-world-costs/>

The article highlights several advantages of switching to electric outdoor power equipment. These include reduced operating costs (40%) due to lower fuel and maintenance expenses, improved environmental sustainability with reduced emissions, quieter operation for less noise pollution, and enhanced efficiency with instant startup and reduced downtime. Additionally, electric equipment often requires less physical effort to operate, contributing to operator comfort and productivity.

Small Tools Cost Breakdown



Cashflow Calculator MOWERS

Internal Combustion Engine

Year	0	1	2	3	4	5
Investment Costs						
Purchase	(\$14,000)					
Upfront Infrastructure	\$0					
Incentives	\$ -					
Loan Cost		\$0	\$0	\$0	\$0	\$0
Subtotal	(\$14,000)	\$0	\$0	\$0	\$0	\$0
Annual Costs						
Fuel cost		(\$2,450)	(\$2,450)	(\$2,450)	(\$2,450)	(\$2,450)
Parts and Repair		(\$368)	(\$561)	(\$942)	(\$1,543)	(\$2,310)
Tax Implications						
Tax depreciation (Infrastructure)		\$0	\$0	\$0	\$0	\$0
Tax depreciation (Purchase)		\$840	\$840	\$840	\$840	\$840
Operating expense tax savings		\$845	\$903	\$1,018	\$1,198	\$1,428
Subtotal		(\$1,132)	(\$1,267)	(\$1,535)	(\$1,955)	(\$2,492)
Cashflow	(\$14,000)	(\$1,132)	(\$1,267)	(\$1,535)	(\$1,955)	(\$2,492)
Total Cost of Ownership in Today's Dollars (NPV)						
		(\$21,183)				

The Electric Mower is \$495 less expensive than the ICE mower over a 5 year lifespan

The Electric mower is \$6.71 less expensive per hour than the ICE mower to operate

Electric Mower

Year	0	1	2	3	4	5
Investment Costs						
Purchase	(\$37,000)					
Upfront Infrastructure	(\$1,500)					
Incentives	\$7,500.00					
Fees/Subscriptions		\$0	\$0	\$0	\$0	\$0
Loan Cost		\$0	\$0	\$0	\$0	\$0
Subtotal	(\$31,000)	\$0	\$0	\$0	\$0	\$0
Annual Costs						
Electricity cost		(\$240)	(\$240)	(\$240)	(\$240)	(\$240)
Parts and Repair		\$0	\$0	\$0	\$0	\$0
Added Value		\$0	\$0	\$0	\$0	\$0
Tax Implications						
Tax depreciation (Infrastructure)		\$1,500	\$0	\$0	\$0	\$0
Tax depreciation (Purchase)		\$2,220	\$2,220	\$2,220	\$2,220	\$2,220
Operating expense tax savings		\$72	\$72	\$72	\$72	\$72
Subtotal		\$3,552	\$2,052	\$2,052	\$2,052	\$2,052
Cashflow	(\$31,000)	\$3,552	\$2,052	\$2,052	\$2,052	\$2,052
Total Cost of Ownership in Today's Dollars (NPV)						
		(\$20,688)				

Breakeven point at 2534 hours